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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,879	08/29/2001	Taisei Hirayama	01473 /LH	7842

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EXAMINER

PATEL, PARESH H

ART UNIT	PAPER NUMBER
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2829

DATE MAILED: 09/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/941,879

Applicant(s)

HIRAYAMA ET AL.

Examiner

Paresh Patel

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION***Response to Arguments***

Applicant's arguments filed 06/16/2003 have been fully considered but they are not persuasive.

Amended claim 1 is objected under 35 USC 132 as it introduces new matter. The added limitations "electrode layers non-contiguously formed" and "adhesive layer being non-contiguous with said pair" wherein the limitation "non-contiguous" as claimed introduces new matter. Applicant also failed to provide a support for these limitations in the specification.

In response to applicant's arguments at page 5, the recitation "for a thermoelectric analyzer" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

In response to applicant's argument at pages 5-7 that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "A thermoelectric analyzer can measure an electrical property of a sample as the sample temperature varies", "measurement of resistance during the temperature variation" and "electrical property of the sample can be accurately

Art Unit: 2829

measured") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

Art Unit: 2829

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 1, applicant added a new matters which was not originally disclosed in the disclosure (specification, abstract, claims or drawing) and therefore is rejected. The newly added matter(s) is/are defined earlier in the response to argument.

Claim(s) depend from this rejected claim is/are also rejected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 7-9 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeya et al. (US 6251696) in view of Richard et al. ("Thermally stimulated current measurement of SiO₂ defect density and energy in irradiated meta-oxide-semiconductor capacitors").

Regarding claim 1, Ikeya et al. (hereafter Ikeya) in fig. 1-8 discloses: a sample assembly for a thermoelectric analyzer comprising:

(a) an electrically insulating substrate [18];

(c) an adhesive layer [15 and 19 or 20] disposed on said substrate, said adhesive layer being non-contiguous with said pair of junction electrode layers;

Art Unit: 2829

(d) a sample [11] fixed to said adhesive layer and being non-contiguous with said pair of junction electrode layers;

(e) a pair of electrode layers [Z1, Z2] formed on said sample.

Ikeya discloses all the elements of the claim except for:

(b) a pair of junction electrode layers non-contiguously formed on said substrate;

(f) two electrically-conductive wires, a first electrically-conductive wire connecting one of said electrode layers with one of said junction electrode layers, and a second electrically-conductive wire connecting the other of said electrode layers with the other of said junction electrode layers.

Richard et al. (hereinafter Richard) discloses :

(b) a pair of junction electrode layers [electrode layers for pin and die on platform of fig. 6, also see disclosure of fig. 6] non-contiguously formed on said substrate [platform of fig. 6];

(f) two electrically-conductive wires [wires that connects die to the pin as seen in fig. 6], a first electrically-conductive wire connecting one of said electrode layers with one of said junction electrode layers, and a second electrically-conductive wire connecting the other of said electrode layers with the other of said junction electrode layers [see wires of fig. 6]. *Richard also suggests the use of ceramic dual in-line packages for measuring electrical property of a sample as the sample temperature varies (see column 2 on page 5717) but it leaks more current as temperature increases (see fig. 5).* It would have been obvious to modify the substrate of Ikeya with platform

Art Unit: 2829

and electrode as taught by Richard, in order to measure an electrical property of a sample that requires sub-pA sensitivity at high temperature.

Regarding claim 2, Ikeya discloses: a sample assembly according to claim 1, wherein said adhesive layer is made of indium [20].

Regarding claims 3 and 8, Ikeya discloses: a sample assembly according to claim 2, wherein said substrate is made of a material selected from a group consisting of aluminum nitride, boron nitride, beryllium oxide and aluminum oxide [ceramic 18].

Regarding claim 7, Ikeya discloses: a sample assembly according to claim 1, wherein said adhesive layer is made of gold-tin alloy [lines 1-15 of column 6].

Regarding claim 9, Ikeya discloses the claimed invention except for said sample assembly according to claim 1, wherein said sample assembly is adapted to be supported by two support rods which serve also as conductors for an electric circuit. Richard discloses sample assembly [fig. 6] is adapted to be supported by two support rods [two stainless-steel screw], which serve also as conductors for an electric circuit [die with wires]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to use conductive support rod as taught by Richard to modify the sample assembly of Ikeya, in order supply a current to the sample [die] for measuring an electrical property. Ikeya and Richard do not discloses gold washers are inserted between said support rods and said junction electrode layers. Rather, Richard uses aluminum washer. Use of gold washer is design choice because it is well known in the art that gold is a good conductor. Ikeya also discloses that junction electrode layers has gold layer on the top for electrical connection. Therefor, it would have been obvious

Art Unit: 2829

to use gold washer for good electrical contact between two electrodes when one contact is used as support for said substrate.

Regarding claim 11, Ikeya discloses: a sample assembly according to claim 4, wherein said pair of electrode layers, said pair of junction electrode layers and said wire means are arranged mirror-symmetrical with respect to a center of said sample [see plan view of fig. 1, 3 and 7].

Regarding claim 12, Ikeya discloses: a sample assembly according to claim 5, wherein said sample is compound semiconductor [11].

Regarding claim 13, Ikeya discloses: a sample assembly according to claim 1, wherein said sample has a plane size of 5 mm X 5 mm or less [lines 22-29 of column 6].

Regarding claim 14, Ikeya discloses: the adhesive layer is made of a material selected from a group consisting of indium and gold-tin alloy [lines 1-15 of column 6].

Claims 4-6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeya and Richard as applied to claims 3, 2 and 1 above.

Regarding claims 4 and 10, Ikeya discloses: a sample assembly according to claim 3, wherein each of said pair of electrode layers and said pair of junction electrode layers is made of a multilayer including a top layer which is a gold layer [lines 43-55 of column 5]. Ikeya do not disclose said wires are gold (Au) wires. Richard discloses these wires [Al wires connecting die to pins of fig. 6]. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Ikeya to include wires as taught by Richard, in order to measure electrical property of a sample. Also use of Au instead of Al, it has been held to be within the general skill of a worker in

Art Unit: 2829

the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claim 5, Ikeya discloses: a sample assembly according to claim 4, wherein said pair of electrode layers, said pair of junction electrode layers and said wire means are arranged mirror-symmetrical with respect to a center of said sample [see plan view of fig. 1, 3 and 7].

Regarding claim 6, Ikeya discloses: a sample assembly according to claim 5, wherein said sample is compound semiconductor [11].

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2829


the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paresh Patel whose telephone number is 703-306-5859. The examiner can normally be reached on M-F (8:30 to 4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 703-308-1233. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Paresh Patel
Aug. 13, 2003


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